

Summary of cases for ARPS/SGDT Project

Last updated 08 June 2000 (EMK)

Case I: 22-23 January 1999 (Questionable)

SYNOPSIS: Supercells start to form near 2000Z in SW AR, spread throughout most of AR by 2200Z. NE-SW oriented lines of supercells form near 0000Z, with a squall line forming by 0200Z. The squall line propagates to the NE and affects only NE AR by 0530Z. However, new storms move into AR from OK and TX.

ARPS DATA: 2km resolution, 24-hr ARPS forecast made by Ming Xue, initialized at 1200Z. Will need to actually obtain history dumps from Ming. 1200Z initial data: 6-km ARPS background field initialized at 12Z. 6-km run initialized with RAOBs, profilers, METAR, Mesonet, and 32-km ARPS background field. (No NIDS, IR satellite, or radar retrieval data).

RADAR DATA: LZK. Data is on NCSA Mass Storage on ekemp account.

Case II: 1-2 May 1999

SYNOPSIS: Nocturnal convection/squall line across TX panhandle and western and central TX weakens to a broken band of showers across western KS/OK/north TX by daybreak. New storms form along NM/TX border by 1600Z, form new NW-SE oriented line of showers across TX panhandle by 1830Z, moves into OK by 2030Z with more showers forming in SW KS. New intense storm clusters fire along NM/TX border by 2030Z and moving into west TX and the TX panhandle. A linear band oriented NE-SW moves through AMA by 0100Z, with more storms south of LBB and other new storms forming near the NM/TX border. A squall line forms by 0400Z across TX panhandle and western TX, and reaches western OK by 0800Z.

ARPS DATA: 3-km resolution, 6-hr ARPS forecasts created during SOP99, initialized at 2100Z and at 0000Z. The 0000Z run is preferred; however, the western lateral boundary is along the TX/NM border. Data stored on NCSA Mass Storage under gbassett account. 2100Z initial data: METAR, Mesonet, IR satellite, ARPS 9-km background field initialized 1500Z (no NIDS, RAOB, profiler, or radar retrieval data). 0000Z initial data: METAR, Mesonet, NIDS data (AMA, DDC, DYX, FDR, FWS, ICT, INX, LBB, MAF, SHV, SJT, SRX, TLX, VNX), IR satellite, ARPS 9-km background field initialized 1500Z (no RAOB, profiler, or radar retrieval data).

RADAR DATA: Either AMA or LBB. However, both are located very close to the edge of the ARPS domain. Data is now on NCSA Mass Storage on ekemp account.

Case III: 3-4 May 1999

SYNOPSIS: Convection begins to develop near Lawton after 2100Z, develops into supercell "A" by 2140Z with supercell "B" one county west of FDR. By 2200Z, supercell "C" forms north of "A"; "B" and another cell are present one county north of FDR. At 2300Z, "C" is one county NW of OKC, "A" is one county SW of OKC, and "B" and another cell are several counties further W-SW. At 0000Z, "A" is moving through OKC; "B" is two counties to the WSW, and a cluster of storms (including "C") is present to the NW. New storms quickly develop/spread across central and northern OK into southern KS after this time; at 0030Z OKC is surrounded by three cells, with "A" NE, "B" W, and a new storm SSE of OKC. At 0100Z more storms develop several counties WNW of OKC/SW of END, and reach END by 0130Z. At this point "A" has dissipated; "B" is NW of OKC, and another cell is east. By 0230Z several new storms are developing E of OKC, and another supercell is one county ENE. At this time an E-W line of supercells begins to develop one county north of OKC and moves northward, affecting END by 0330Z and becoming NE-SW oriented by 0430Z. A separate NE-SW band of convection begins to form E and S of OKC by

0330Z and moves NE. By 0515Z additional cells begin to develop NE of OKC; by 0600Z storms are present all across eastern and northeastern OK.

ARPS DATA: 3-km resolution, 6-hr ARPS forecasts created during SOP99, initialized at 2100Z and at 0000Z (note that the 0000Z run is the preferred forecast based on timing of convection). Data is stored on NCSA Mass Storage under gbassett account. 2100Z initial data: METAR, Mesonet, IR Satellite, 9-km ARPS background field initialized 1500Z (no NIDS, RAOB, profiler, or radar retrieval data). 0000Z initial data: METAR, Mesonet, NIDS reflectivity (AMA, DDC, DYX, FDR, FWS, ICT, LBB, MAF, SHV, SJT, SRX, TLX, VNX), IR satellite, 9-km ARPS background field initialized 1500Z (no RAOB, profiler, or radar retrieval data) .

RADAR DATA: TLX. Data is now on NCSA Mass Storage on ekemp account.

Case IV: 20-21 May 1999

SYNOPSIS: Intense NE-SW oriented squall line is present NW of ICT at 2100Z. Small isolated cells form ahead of squall line by 2300Z but then dissipate. Squall line moves through ICT between 0200Z and 0300Z. By 0400Z the squall line reaches the KS/OK border south of ICT. Storms are still quite intense by 0600Z.

ARPS DATA: 3-km, 6-hr ARPS forecasts created during SOP99, initialized at 2100Z and at 0000Z. The 0000Z run is preferred. Data stored on NCSA Mass Storage under gbassett account. 2100Z initial data: METAR, Mesonet, NIDS data (AMA, DDC, DYX, FDR, FWS, GLD, ICT, INX, LBB, MAF, SJT, SRX, TLX, TWX, VNX), IR satellite, 9-km ARPS background field initialized 1800Z (no RAOB, profiler, or radar retrieval data). 0000Z initial data: METAR, Mesonet, NIDS reflectivity (AMA, DDC, DYX, FDR, FWS, GLD, ICT, INX, LBB, MAF, SHV, SJT, SRX, TLX, TWX, VNX), IR satellite, 9-km ARPS background field initialized 1800Z. (no RAOB, profiler, or radar retrieval data).

RADAR DATA: ICT. Data is now on NCSA Mass Storage on ekemp account.

Case V: 2-3 June 1999

SYNOPSIS: Isolated supercells develop in extreme eastern NM by 2200Z, enter TX/OK panhandles by 2300Z. (FDR goes into precip. mode by 0000Z.) By 0100Z, storms are transitioning into a N-S oriented line that has moved through AMA, with the northern end of the line extending into extreme SW KS by 0200Z; more isolated cells are present south of the line and are oriented SW-NE in west TX. Storms pass through LBB after 0300Z, cross into western OK by 0400Z, and move through DDC at 0430Z. Convection is completely out of the panhandles by 0600Z, and extends from southern KS through western OK to the Red River.

ARPS DATA: 3-km, 6-hr ARPS forecasts created during SOP99, initialized 2100Z and 0000Z. The 0000Z run is preferred. Data is on NCSA Mass Storage under the gbassett account. 2100Z initial data: METAR, Mesonet, NIDS reflectivity (AMA, DDC, DYX, FDR, FWS, GLD, ICT, INX, LBB, MAF, SHV, SJT, TLX, TWX, VNX), IR satellite, Radar retrieval from INX, 9-km ARPS background field initialized 1800Z (no RAOB or profiler data). 0000Z initial data: METAR, Mesonet, Radar retrieval data (FWS, INX, SRX), 9 km ARPS background field initialized 1800Z (No NIDS, IR satellite, RAOB, or profiler data).

RADAR DATA: AMA is the top candidate, but the radar is very close to the lateral boundary. Other possibilities: LBB, DDC, FDR. Data is on NCSA Mass Storage under the ekemp account.

Case VI: 1-2 June 1999

SYNOPSIS: A NE-SW line of convection begins developing NW of FWS at 2130Z, with other cells forming after 2200Z in eastern OK near MLC and E of TUL. The line moves very slowly, with cells becoming more isolated near 0100Z and mostly dissipating by 0200Z without moving through FWD.

However, some convection continues S of MWL, and by 0330Z a new E-W line of storms develops across central TX, moving slowly southward. Storms also continue in E and SE OK through 0300Z. One or two cells are still present on FWS radar at 0600Z W of ACT.

ARPS DATA: 3-km, 6-hr ARPS forecast created during SOP99, initialized at 2100Z. Data is on NCSA Mass Storage under the gbassett account. 2100Z initial data: METAR, Mesonet, NIDS reflectivity (AMA, DDC, DYX, FDR, FWS, GLD, ICT, INX, LBB, MAF, SHV, SRX, TLX, TWX, VNX), radar retrieval (SRX and INX), IR satellite, 3-km ARPS background field initialized 1800Z (no RAOB or profiler data).

RADAR DATA: FWS preferred, with TLX and INX also possible. Data is on NCSA mass storage under the ekemp account.

Case VII: 4-5 June 1998

SYNOPSIS: Isolated storm develops W of FWS at 2130Z, NE-SW line of storms develops NW of FWS by 2230Z, and other storms develop at this time SE of ABI. Separate convection also develops in eastern OK by 2215Z but move into AR by 2315Z. By 0100Z, squall line extends from FWS NE into SW OK, with more isolated storms continuing to the SW. These storms move to the east. Another cluster of thunderstorms develops by 0300Z east of TLX and moves to the NE, reaching AR after 0500Z. The TX squall line reaches eastern TX and weakens considerably by 0500Z; however, a new storm is present on the extreme SW edge of the FWS radar screen by 0530Z.

ARPS DATA: None.

RADAR DATA: FWS. Data is on NCSA Mass Storage under the ekemp account.